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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,129	04/20/2005	Yvon Beauge	052449	6003

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EXAMINER	
TRAN, DIEM T	

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/532,129	BEAUGE ET AL.	
	Examiner	Art Unit	
	Diem Tran	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,7,8,17* is/are rejected.

7)☒ Claim(s) *2,3,5,6,9-16,18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

An Applicant's Preliminary Amendment filed on 4/20/05 has been entered. In this preliminary amendment, claims 1-8 have been amended and claims 9-19 have been added. Overall, claims 1-19 are pending in this application.

Specification

The disclosure is objected to because of the following informalities:

-The following headings of the specification are missing, such as:

- Background of the Invention.

- Brief Summary of the Invention.

-Brief description of the drawing(s) as required by 37 FR 1.74. Appropriate corrections are required

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Tashiro et al. (US Patent 6,901,747).

Regarding claim 1, Tashiro discloses a system for assisting regeneration of a storage/release Nox trap integrated into an exhaust system of a motor vehicle diesel engine, which includes means for injecting fuel into the cylinders of the engine in the form of at least pilot and main injections and means for controlling the injection means to switch the engine periodically from a standard mode of operation using a lean mixture with one pilot injection and one main injection (see col. 11, lines 19-23), in which NOx are stored in the trap, to a regeneration mode of operation using a rich mixture, with at least two main injections depending on the engine load, in which Nox are released from the trap and the trap is regenerated (see Figure 1, col. 11, lines 24-31, col. 17, lines 36-40, col. 19, lines 55-64).

Regarding claim 6, Tashiro further discloses that in the mode of operation with two main injections, the pilot injection is triggered approximately ahead the top dead centre (see Figure 5), and the main injections are triggered in an under calibrated range from approximately 20 ° ahead of top dead centre to approximately 120 ° after top dead centre (see col. 8, lines 45-50, col. 11, lines 45-50).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 8, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US Patent 6,901,747) in view of Ito et al. (US Patent 5,775,099).

Regarding claims 4, 8, Tashiro discloses all the claimed limitations as discussed in claim 1 above, however, fails to disclose the engine being associated with means for recirculating exhaust gas to its inlet side, regulating the operation of the recirculation means when the engine is using a rich mixture and reducing the quantity of gas admitted into the engine when the engine is operating in the regeneration mode. Ito teaches reducing an opening of an EGR valve (29) when the NOx releasing flag is set to start a rich process (see Figure 103), and thus, reducing a quantity of recirculated gas admitted into the engine when the engine is operating in a regeneration mode (see Figure 85).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teachings of Ito in the Tashiro system, since the use thereof would have been conventional in the art to generate an exhaust gas with sufficient reducing agent for the regeneration of the NOx trap.

Regarding claim 17, Tashiro further discloses that in the mode of operation with two main injections, the pilot injection is triggered near the top dead centre (see Figure 5), and the main injections are triggered in an under calibrated range from approximately 20 ° (crankshaft) ahead of top dead centre to approximately 120 ° after top dead centre (see col. 8, lines 45-50, col. 11, lines 45-50).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US Patent 6,901,747) in view of Hohne et al. (US Patent 6,171,565).

Regarding claim 7, Tashiro discloses all the claimed limitations as discussed in claim 1 above, however, fails to specifically disclose operating the engine with a lean mixture for approximately 60 seconds and with a rich mixture for approximately 2 seconds. Hohne teaches that the injection means in order to operate the engine with a lean mixture for approximately 60 seconds and with a rich mixture for approximately 2 seconds to regenerate the NOx trap (see col. 5, lines 30-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Hohne in the Tashiro system, since the use thereof would have been conventional in the art.

Allowable Subject Matter

Claims 2, 3, 5, 6, 9-16, 18, 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (571) 272-4866. The examiner can normally be reached on Monday -Friday from 8:30 a.m.- 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 800-786-9199 (toll-free).

Diem Tran
Patent Examiner
Art unit 3748

DT

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TECHNOLOGY CENTER 3700